

Alcimedes

An interesting paper in *Addiction* (2007;102:1910–1917) suggests that experimental studies may offer a preliminary basis for *per se* limits for driving under the influence of cannabis. The results from a comparison of two meta-analyses on alcohol and cannabis respectively suggest a BAC of 0.04% and a serum concentration of delta-9-tetrahydrocannabinol of 4.2 ng/ml cause comparable impairment of driving related skills. The international working group of experts on issues related to drug use and traffic safety evaluated the evidence from experimental and epidemiological research and suggests that a THC concentration in the serum of 7–10 ng/ml is correlated with impairment comparable to that caused by a BAC of 0.05%. However, the paper does go on to discuss areas of uncertainty such as the correlation between a smoked dose of THC and the resulting blood concentration, which shows considerable inter- and intra-individual variability. Also there will be variability in the analytical accuracy between laboratories and this must be considered when setting a legal limit.

Urine and hair samples from sexual assault complainants attending four clinics in different parts of the US were tested for 45 drugs, including ethanol, and those pharmacologically capable of inducing sedation, amnesia, or impairment of judgment (*J Forensic Sci* 2007;52(6):1396–1400). A specific aim of the study was to correlate drug use as reported by subjects with analytical findings in urine. Overall, just over 43% of the subject cases could be classified as drug-facilitated sexual assault (DFSA), with a range of 30–60% across the clinics. DFSA classification was based on confirmed findings of drugs in the urine and a 72 h time window. Just over 7% of the total patient population could be similarly classified. Overall subjects under-reported their use of drugs. Hair was of limited value as the specimens were obtained from subjects at the second clinic visit which provided insufficient time for a drug ingested at or near the time of the initial visit to accumulate in hair to detectable levels. Drugs confirmed in hair in this study are likely to represent ingestion in the weeks preceding presentation to the clinic.

Three cases of acute poisoning from body packing with methamphetamine (MA) have been reported (*J Forensic Sci* 2007;52(5):1219–1222), resulting in death in one individual. The report points out that a number of papers have been published concerning cases of cocaine or opiate body packers but few concerning MA body packers. As MA

usage is increasing we may see more cases of body packing although the fact that MA is easily synthesized and produced locally reduces the need for international trafficking of the drug.

An historical analysis has been published regarding deaths in custody (*J Forensic Sci* 2007;52(5):1177–1181). A retrospective analysis of 145,425 deaths from Maryland's Office of the Chief Medical Examiner between 1938 and 2004 was conducted. Two hundred and two custodial deaths were identified and examined relative to time, agency, decedent characteristics, and cause and manner of death. The results indicate that there have been substantive changes in custodial deaths over time with cardiovascular death having been the most frequent in the 1930–1970s. Sudden unexplained deaths involving violent behaviour, the use of multiple restraints, and drug intoxication were not identified until the 1980s, which coincides with the time when cocaine abuse increased in the US. Whilst there needs to be an increased awareness of these types of deaths and the use of rigorous protocols for their investigation, the authors conclude that more research is required in this area.

Farrell and Marsden have investigated drug-related deaths among newly released prisoners in England and Wales and have found that they are at acute risk of drug-related death (*Addiction* 2007;103:251–255 and *Commentary* 2007;103:256–257). In the first 2 weeks after release from prison males were 29 times and females were 69 times more likely to die than the general population. The deaths were due to opioid overdose, though alcohol and antidepressants exacerbate the picture. There is a need for urgent intervention and the authors call for prevention measures, including a planned release of drug-dependent prisoners that is guided by risk appraisal and linked to active referral to community-based treatment and support services.

Alcimedes is reminded that the interpretation of drug levels in fatalities poses a difficult challenge so was interested to read a paper looking at methadone toxicity fatalities (*J Forensic Sci* 2007;52(6):1389–1395). This study reviewed 176 fatalities ascribed to methadone toxicity by the Office of the Chief Medical Examiner in Kentucky between 2000 and 2004. Post-mortem toxicological analysis recorded a more than 10-fold increase in methadone-related

fatalities. The interpretation of the blood methadone concentration alone or in combination with other psychoactive drugs requires consideration of the subject's potential chronic use of, and tolerance to, methadone and its

possible interaction with other drugs detected. As well as a genetic predisposition with regard to cytochrome CYP3A4 metabolism, this can also be affected by certain drugs, which can induce or inhibit the liver enzymes.